

On Terms

Some Comments on the Distinction Between Intention and Intentionality

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The topic of intention has recently received attention from behavior analysts (Hineline, 2003; Neuman, 2004). From a behavior-analytic perspective, it is important to identify the circumstances in which people utter such terms, and to identify the potential circumstances that maintain such utterances. It follows that from a behavior-analytic perspective, the focus is primarily on those who observe behavior and attribute intentions to that behavior. However, there has not been a distinction between *intention* and *intentionality*. The current analysis stresses the distinction between the two terms, both from a traditional point of view (psychologist and layperson) and from a behavior-analytic point of view. From a behavior analyst's perspective, the distinction is important because observers may be responding to distinct functional relations when they attribute intention or intentionality to behavior.

Key words: intentionality, intention, attribution of intention, functional analysis of intentionality

Although not traditionally a topic for behavior analysis, the circumstances in which we speak of intentions and the situations in which observers attribute intentions as causes of behavior have recently been addressed by behavior analysts (Hineline, 2003; Neuman, 2004). Hineline stressed the misdirective nature of intentional terms that results in observers looking within actors for sources of behavior rather than at current and past contingencies, and how these misdirections come to occur. Neuman stressed the role of inferred verbal behavior in cases of observed contingency-shaped behavior (intentionality, to the layperson) and the role of verbalizations in cases of observed instructional control on attributions of instructional control (intention-influenced behavior, to the layperson). In both cases, the focus is on the observer's attribution of intentions as causes of behavior rather

than on the role of intentions in the actor's behavior.

Hineline (2003) and Neuman (2004) did not provide traditional operational definitions of *intention*, but rather, they were consistent with behavior-analytic operationism (Skinner, 1945). The distinction between operational definitions and Skinner's operationism is essential because the former could result in reification of intentions, and the latter is likely to result in clarification of what is going on when we speak of intention and of the contingencies that maintain this speaking. The importance of analyzing the distinction is supported by Leigland (1996), who provided a detailed review and defense of the functional analysis of psychological terms in which he asserted that such a program is of great importance. Although beyond the scope of the present paper, it is important to note that this type of functional analysis is critical for furthering a behavior-analytic approach to verbal behavior generally and for providing a scientific understanding of terms of cultural importance like *intention* more specifically.

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There are three obvious reasons why those outside the field of behavior analysis would not accept a behavior-analytic account of intention. First and foremost, a behavior-analytic approach to intentions does not treat them as causes of behavior (Hineline, 2003; Neuman, 2004). Rachlin (1994) described efficient and final causation as two of the four elements of Aristotle's conception of cause. In fact, Hineline specifically stated that intentions are what Aristotle referred to as efficient causes, which are "shorthand" causal explanations rather than final causes, which would be the functional relations that the behavior in question is a part of. That is, efficient causes are abbreviations in the form of a word or phrase that takes the place of a detailed account of a network of causal relations, the final cause. Therefore, the behavior analyst would not consider intentions to be causes, whereas those outside behavior analysis consider intentions to be sufficient explanations of behavior. Second, behavior-analytic treatments are not organism-based accounts, whereas intentional accounts of behavior generally are. That is, agency, or the locus of control of behavior, is not assumed to be in the organism but rather in the environment. Those outside the behavior-analytic tradition tend to construe the locus of control of behavior to be inside the organism, where intentions are presumed to be. Finally, both Hineline (2003) and Neuman (2004) focus on the behavior of those doing the observing and interpreting of behavior, with attention given to the causes of the person's behavior being explained only to identify the conditions and contingencies that prompt observers to speak of intention.

There is another more subtle reason why those with a more traditional orientation would reject a behavior-analytic orientation. To date, behavior-analytic accounts do not distinguish between intention and in-

tentionality, which from a more traditional psychology perspective, is an omission that renders the behavior-analytic accounts incomplete at best. The purpose of this paper is to address the distinction between intentionality and intentions. In addition, some points will be made along with examples in an attempt to convince readers that behavior analysts can find utility in statements that identify what Aristotle termed efficient causes.

The Distinction Between Intention and Intentionality

Searle (1980), a prominent cognitive philosopher, made a key distinction in his account of intentionality that may serve to separate behavior with intentionality from behavior influenced by intentions. First, he distinguished between prior intentions and intentions in action. That is, a person may plan to do something said to involve intent (e.g., go to a conference), as opposed to doing something unplanned said to involve intentionality (e.g., catch a fly ball). Next, he stated that prior intentions are self-referential; the individual's intentions are about the individual's own behavior. Finally, he proposed that actions have two components: the experience of acting (intentions in action) and engaging in the action itself (e.g., arm movement). That is, the action includes proprioceptive stimulation and self-attending to that stimulation as well as some verbal behavior about the action that is temporally removed (before or after) from the action. According to this account, all actions that are not visceral or reflexive must have an intentional component to them. However, not all actions are influenced by prior intentions, and not all prior intentions influence action, as expressed in the following:

All intentional actions have intention in action but not all intentional actions have prior intentions. I can do something intentionally

without having formed a prior intention to do it, and I can have a prior intention to do something and yet not act on that intention. (pp. 52–53)

According to Searle, there are instances in which prior intentions do influence actions. These prior intentions, which are verbal in form as well as self-referential (e.g., “I will do X”), must influence (rather than merely occur) the components of action (X) for the action to be distinguished from other intentional actions. That is, Searle made the distinction between actions that are influenced by self-referential verbalizations (prior intentions) and those that are not, although both may be considered intentional actions:

The prior intention to raise my arm represents both the experience of acting and the movement, and is self-referential in the sense that unless the intention causes the experience of acting which in turn causes the movement, I don’t really carry out my prior intention. (p. 62)

Here, Searle distinguished between intentions (acts influenced by prior intentions) and intentionality (intention in action or experience of acting).

Chapman (1990), who describes his position as consistent with Searle’s, also directly addressed the distinction between intention and intentionality. His view is the same as Searle’s view, construing intentions as causal antecedents of actions, whereas intentionality is the directed property of mental states: “Intentionality is the directed property of certain mental states, as described previously; intentions are the causal antecedents of actions and, as such, are only one type of Intentional mental state” (p. 251). To clarify what is meant by “directed property of certain mental states,” consider the following quote:

Consider the evidence that even 2-month-olds desire rewards and that they exhibit joy or anger depending on whether those desires are

satisfied or not. At most, this is evidence that they possess certain Intentional states (desire, joy, anger, frustration), not that they have intentions. (p. 251)

Finally, the next quote highlights the operant nature of intentionality, the importance of which will become clear in the following section. I should note that Chapman made the statement to identify a misuse of the word *intention* and to show an instance in which the distinction between intention and intentionality was not made.

The fact that the instrumental response of 2- to 8- month-olds increases during the extinction phase of an operant conditioning experiment, along with corresponding changes in their expressions of joy and anger, can be explained only by attributing intention to them in the form of the *desire* to obtain the reward by means of the instrumental response. (p. 251)

Behavior Analysis and the Distinction Between Intention and Intentionality

Neuman (2004) stressed the influence of verbal behavior or inferred verbalizations (what Searle referred to as the influence of prior intentions on actions) on the attribution of intention as a cause of behavior. However, even in situations in which it is unlikely that verbalizations occurred or in which it is unlikely that verbal behavior influenced other behavior (instructional control or rule-governed behavior), people often attribute intention when explaining behavior. For instance, when an outfielder catches a fly ball, we say that he intended to do so even though it is unlikely that the catch involved instructional control. According to Searle (1980), there is intention in action (synonymous with intentionality) but no prior intention when engaged in movements such as catching a fly ball.

The goal of the current précis is to identify the circumstances in which observers speak of intentionality even though there is no prior intention.

That is, from a behavior-analytic point of view, when do observers speak of intentionality when behavior is contingency shaped rather than under instructional control or inferred instructional control? Consider an example with nonliving moving objects. Dasser, Ulbaek, and Premack (1989) expanded on classical work on the perception of causality using habituation (looking times) and dishabituation (looking times at a new movement sequence) tests of attention. Children attended longer to the synchronized movements deemed intentional than to those of the nonintentional movements that were desynchronized. An example of a synchronized movement would be a large ball (L) lowered itself, remained motionless; a small ball (S) moved toward L and touched it, whereupon L pushed S away; S moved again toward L and jumped on it, L pushed S away; L hit S and returned to its initial location; S rapidly left. In the corresponding desynchronized condition, each ball moved in the same way but L started later in the sequence. Because the observations were of two moving balls rather than the behavior of live organisms, verbal activity of the observed individual as a basis for the discrimination of intentionality can be eliminated. The following quote highlights why causal statements made by the children were interpreted as intentional causes:

There is, however, a second sense of causal. Ball L hit ball S *because* S made it angry; S rushed back to L *because* it was afraid; and so on. "Because" in these constructions does not refer to physical causality, defined by the temporal-spatial contiguity of two appropriate actions; but to psychological causality, defined by an inferred change in the internal state of one object brought about by either an inferred change in the internal state of another object, the action of another object, or both. This sense of causality is what we mean by intention. (p. 367)

Based on the statements made by subjects in the experiments, it was

concluded that synchronous rather than desynchronized movements prompted subjects to anthropomorphize the movement of the objects and speak of intentionality.¹ It is likely that synchronous movements as well as actions with clear or inferred outcomes prompt individuals to speak of the intentionality of live organisms. That is, most contingency-shaped behavior would be interpreted by non-behavior-analytic psychologists and laypeople as involving intentionality.² Observers say that an outfielder catching a fly ball involves intentionality because the consequences of doing so are clear. In addition, the same is true of negatively reinforced behavior; quarterbacks may "throw the ball away" to avoid being sacked, and we say the act involved intentionality. Like other contingency-shaped behavior, learning the behavior in these two examples may have involved instructional control when initially performed, but it is unlikely that verbalizations influence the actions once they are well practiced. Still, these situations may result in the attribution of intentionality to behavior, but not intentions.

It is important to clarify that outcome or consequences of behavior are probabilistic, and these consequences vary in reinforcing value. That is, a response may produce a menu of consequences, hierarchically related with respect to probability of occurrence as well as reinforcing value. For example, two alternative consequences of a quarterback throwing a pass are a reception and an interception. Regardless of

¹ Although the word *intention* is in the quote, it refers to the movement of nonliving (and therefore nonverbal) objects. Therefore, it is an example of intentionality (intention in action) rather than intention (prior intention).

² Although self-stimulatory behavior such as fingernail biting is contingency-shaped behavior, it is not likely to be interpreted as intentional because the consequences of engaging in the behavior are not clear from the observer's point of view.

what happens, observers tend to say that a reception is intentional and an interception is unintentional. This is because receptions are the more likely outcome of the two alternatives as well as the more reinforcing outcome. Note that there are exceptions in which observers attribute intentionality to behavior when the most likely outcome is less reinforcing, as in gambling. In such cases, the lower probability outcome may involve relatively greater reinforcing value, so observers may still attribute intentionality to behavior.

It should be noted that not all behavior that is part of orderly relations would be interpreted as involving intentionality. Consider visceral responses that may be part of reflexes that enter into Pavlovian relations. People tend not to say that an individual intends to perspire just before giving an oral presentation. In addition, observers tend not to say that an individual intends to be nervous when one predicts that one will be anxious when giving an oral presentation. However, one might say one intentionally put one's hand on a door knob and turned it (operant behavior) when entering a room, because the consequences of doing so are relatively likely and reinforcing.

Why the Distinction Is Important to Behavior Analysts

I am not suggesting that *intention* and *intentionality* are useful terms to be adopted by behavior analysts. However, behavior analysts are part of a larger verbal community that regularly uses these terms when explaining behavior, and I am asserting that intention and intentionality suggest distinct functional relations. Although thorough functional analyses are preferred, behavior analysts often must rely on verbal descriptions of behavior problems that include these terms when developing and implementing interventions. In applied

settings, it would be ideal to perform a complete and thorough functional analysis for each case. Sometimes, there are limitations that can decrease the breadth of the analysis, and under some circumstances, completing a functional analysis is not feasible. In these circumstances, behavior analysts may be constrained to rely at least in part on the verbal descriptions of behavior and its potential functional relations provided by relevant caregivers such as parents and teachers. Such descriptions typically include efficient causes like intentionality, and it could be useful for behavior analysts to identify potential functional relations in these situations. In addition, because much of the behavior targeted for reduction does not involve instructional control, it is likely from the layperson's point of view to involve intentionality rather than intent.

Consider an example in which persons engage in self-injurious behavior. Two alternative statements from caregivers might be, "She doesn't seem to be aware of her surroundings" or "He banged his head intentionally." Without data collection, one might assume that the function of self-injury in the first case is self-stimulatory. Although this is contingency-shaped behavior, the outcome may not be clear to the observer. In the second case, it may produce attention or a tangible item. The point is that statements that identify efficient causes may be useful aids in identifying functional relations or guiding an assessment when the situation does not afford a thorough functional analysis.

Consider another example in which persons engage in aggression. Two alternative statements from caregivers might be, "She doesn't really mean to do it" or "He intentionally hurts other people." Without data, one might assume that the first statement refers to elicited or respondent aggression (Azrin, Hutchinson, & Hake, 1963; Ulrich & Azrin, 1962; Ulrich, Wolff,

& Azrin, 1962). One might assume from the second statement that the aggression is operant, maybe resulting in escape from an aversive situation (Azrin & Holz, 1966). Making these assumptions can help to reduce the time needed to complete a functional analysis or give applied behavior analysts direction when a functional analysis is not possible.

Finally, consider a couple in counseling to address marital problems and a statement such as "Whenever we have a disagreement, he intentionally changes the subject" may result in the behavior analyst making inferences about possible functional relations. It is likely that changing the subject functions as avoidance behavior, which is contingency-shaped behavior where laypersons speak of intentionality. There is no reason to assume that changing the subject involves rule-governed behavior (intention). Now, consider an alternative statement such as "Whenever we have a disagreement, he plans a golf vacation with his friends." Planning a trip most likely involves rule-governed behavior, or intent, and there is no reason to assume that a remote event like a vacation would terminate a discussion. These distinct topographies likely entail different functional relations calling for different interventions, the former involving intentionality and the latter involving intention.

Because people often explain behavior with efficient causes (Hineline, 2003), it is important for the behavior analyst to be aware of the circumstances in which this occurs so potential functional relations can be identified. This includes the distinction between *intention*, which relies heavily on the influence or inferred influence of verbal behavior on other behavior (Neuman, 2004), and *inten-*

tionality, which typically involves contingency-shaped behavior when the potential alternative consequences of behavior are clear to those doing the observing and interpreting.

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